

FIG. 1B

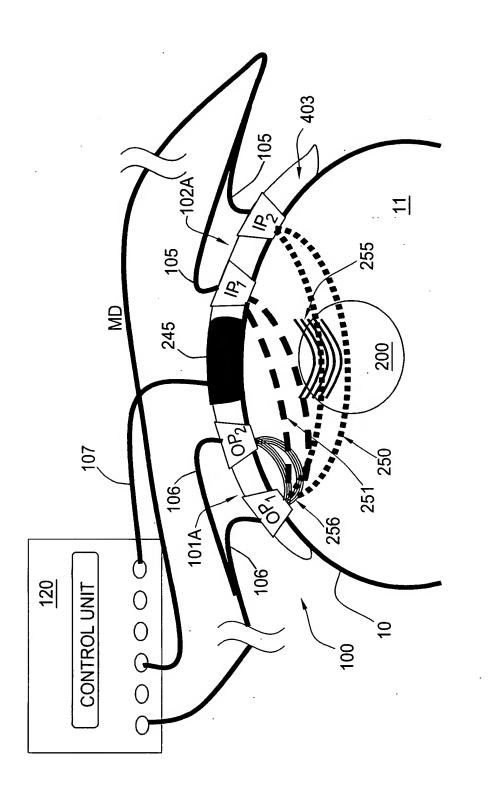


FIG. 10

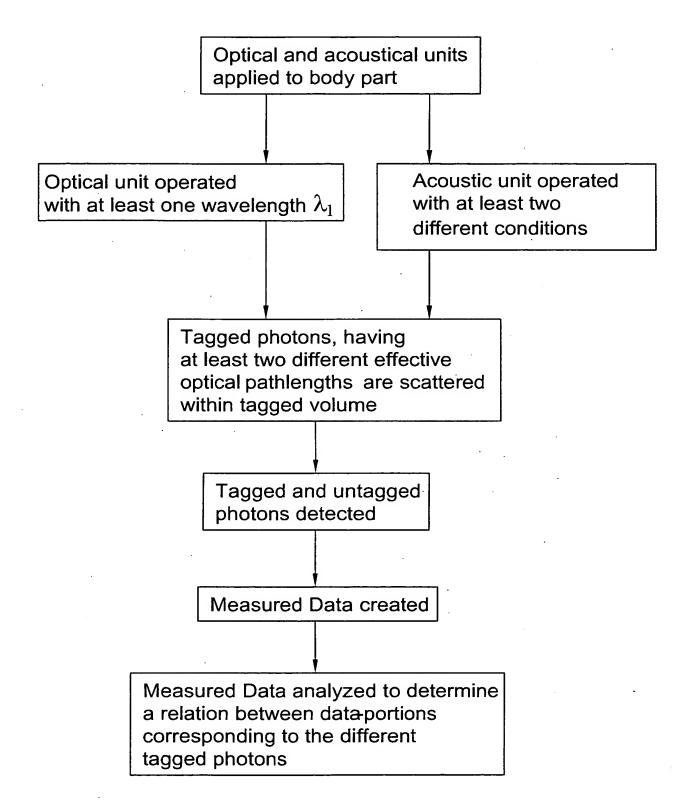


FIG. 1D

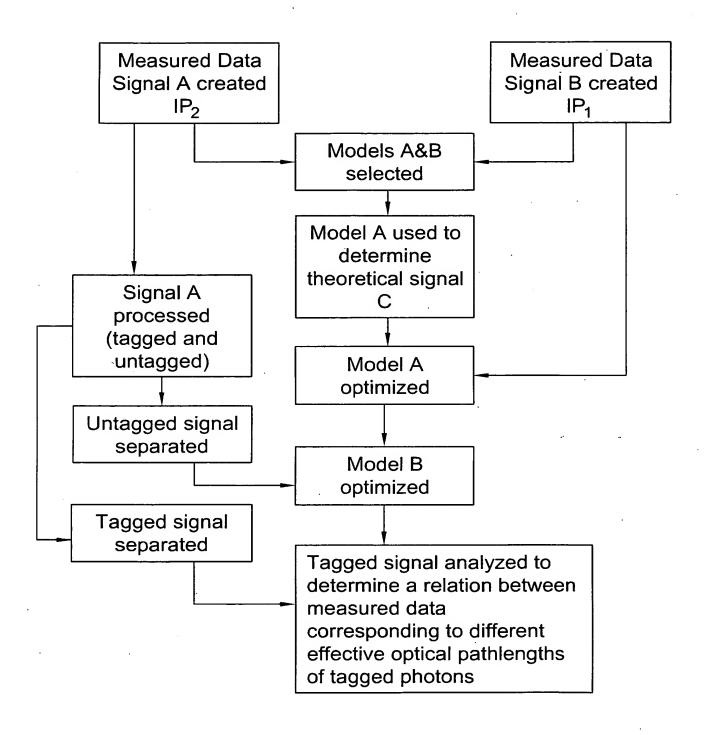


FIG. 1E

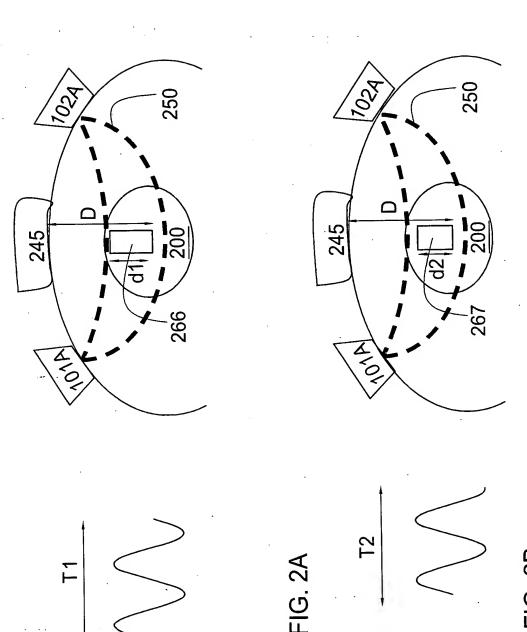
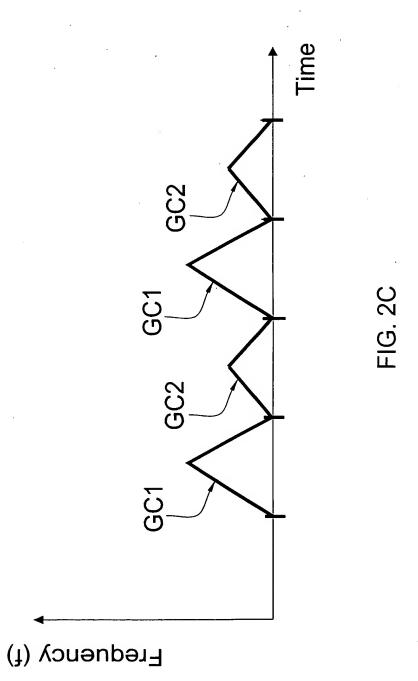


FIG. 28



Step 1: Control unit 120 activates signal generator 120A to generate a pulse with Amplitude A, Frequency F, phase  $\phi$  and Duration T1

Step 2: Generated pulse activates transducer arrangement 110 at time t 100 for duration T1

Step 3: Control unit 120 activates illumination unit 101A to emit light with wavelength  $\lambda_1$ 

Step 4: Detection unit 102A collects tagged and untagged light scattered from tagged volume during time T0

Step 5: Control unit 120 analyzes tagged and untagged signals to determine a parameter of the signal corresponding to the optical attenuation. Parameter 1 is stored in memory

Step 6: Control unit 120 activates signal generator 120A to generate a pulse with Amplitude A, Frequency F, phase  $\phi$  and Duration T2

Step 7: Generated pulse activates transducer arrangement 110 at time t 200 for duration T2

Step 8: Control unit 120 activates illumination unit 101A to emit light with wavelength  $\lambda_1$ 

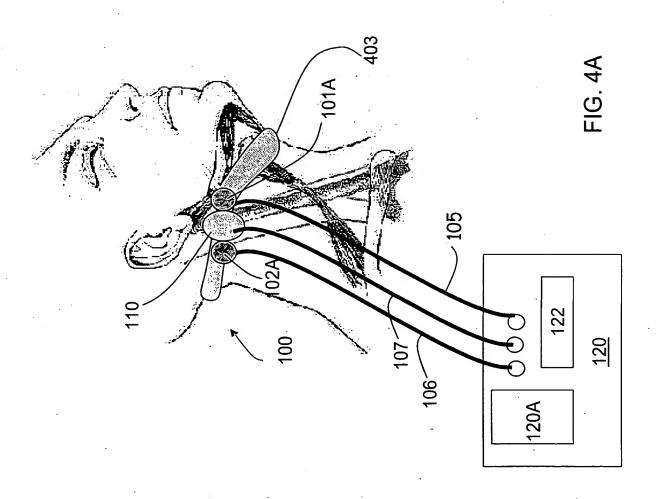
Step 9: Detection unit 102A collects tagged and untagged light scattered from tagged volume during time T0

Step 10: Control unit 120 analyzes tagged and untagged signals to determine a parameter of the signal corresponding to the optical attenuation. Parameter 2 is stored in memory

Step 11: Difference of parameter 1 and parameter 2 determines optical attenuation of wavelength λ<sub>1</sub> in tagged volume

## FIG. 3

Repeat steps 1- 11 with second wavelength of light  $\lambda_2$  to determine optical attenuation in tagged volume. Ratio between optical attenuation at the two wavelengths determines oxygen saturation of the region of interest



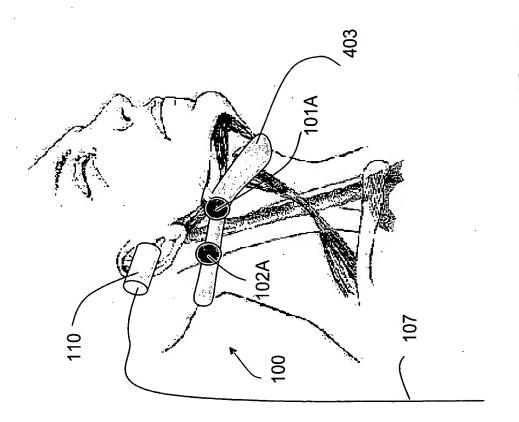
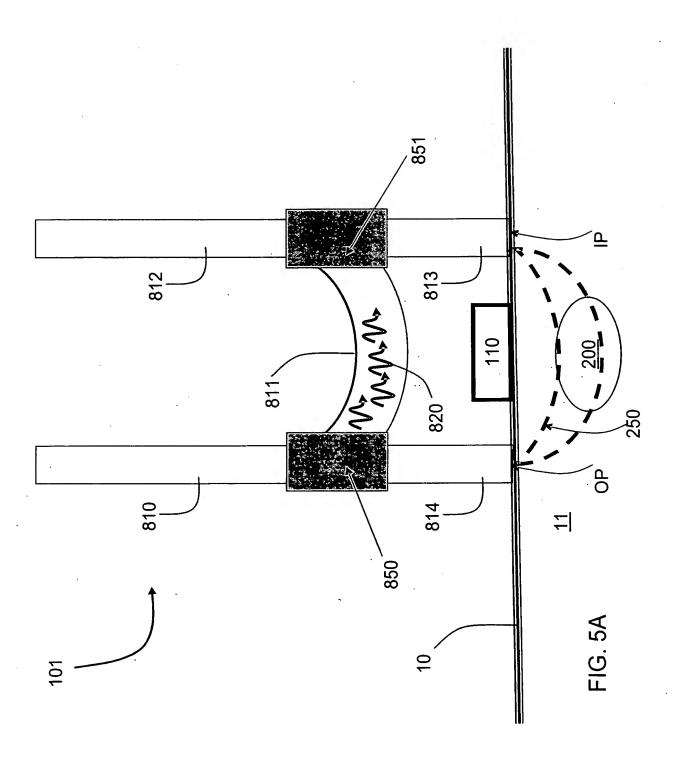
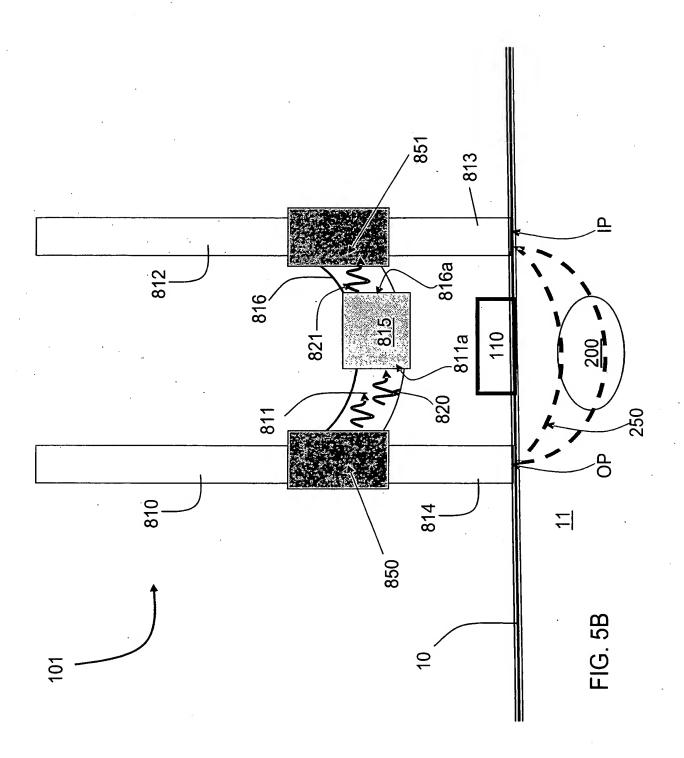


FIG. 4B





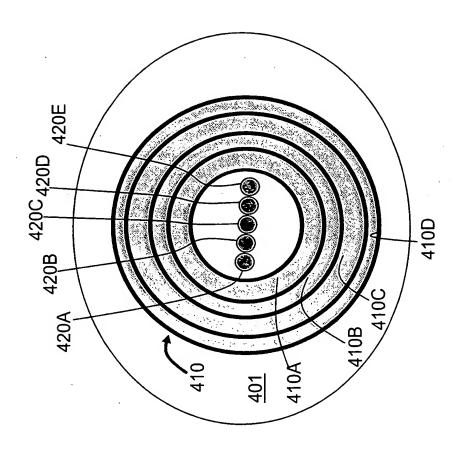
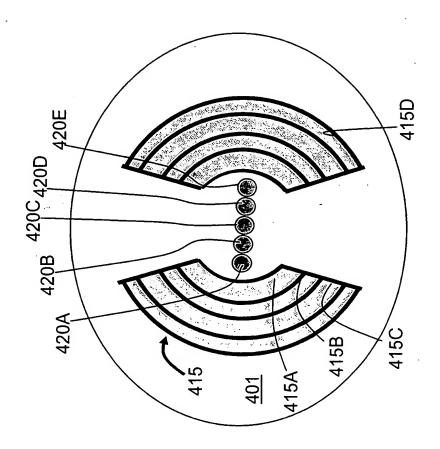
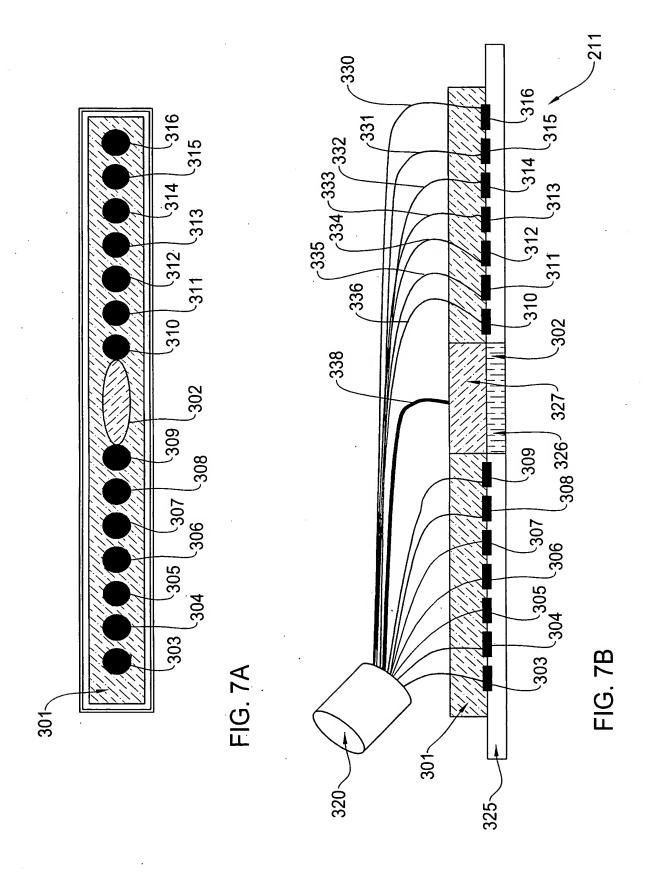


FIG. 6A



-1G. 6B



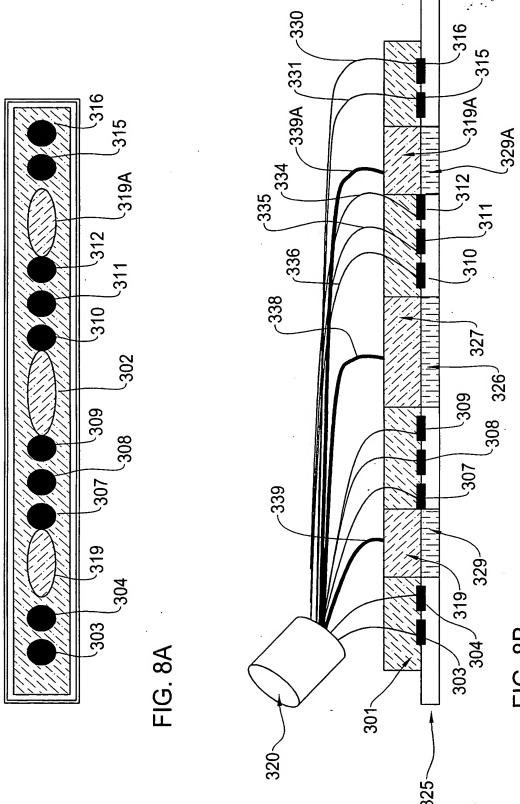


FIG. 8B

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